KOMTEK I

MICROCOMPUTER

USER FRIENDLY MANUAL

KOMTEK TECHNOLOGIES LTD.

INTRODUCTION

The Komtek 1 Microcomputer is a general purpose computer designed with compactness is mind. It is very durable mechanically and electrically, the basic unit comes with a Z80 CPU fitted with 16K bytes of RAM (Random access memory) and from 12K to 16K bytes of ROM (Read only memory), depending on the option. The unique features of the Komtek 1 are its control and sensing functions. The control functions enable the computer to turn appliances and equipment on and off at a prescribed time or in a prescribed logic pattern, the sensing functions feed back the information to the computer to enable the computer to make decisions. For example, you can programme your computer to turn on your kettle at certain time in the morning and to turn it off when the water has boiled. With the sensing function operating you can turn on the kettle as before but this time put a thermostat so that the moment the water boils the sensing function to the thermostat tells the computer to turn off the electricity.

The Komtek 1 computer comes with a 12K ROM programmed with a 12K Level II Basic. This enables you to do a wide variety of computer programmes. The computer is adapted for expansion to 32K RAM on the circuit board by fitting 8 more memory chips, and to 48K by fitting another 16K RAM Card. The disk controller board is fitted on the roof of the cabinet. In addition printer functions are available by fitting a printer control chip or printer interface. To make the computer a color computer a colour interface can be fitted below the disk controller board on the main board. Thus the Komtek 1 computer is totally self contained. With no need for separate power pack, modulator pack, memory pack, expander pack or modules to be seen outside of the cabinet. It is therefore a uniquely compact computer.

THE KOMTEK COMPUTER SYSTEM

You can build up your Komtek computer system in a variety of ways. If you are a newcomer to microcomputers we suggest that you start with a minimal system and upgrade it gradually as you go along, that way your experience and enjoyment of the Komtek will show you which peripherals will be of most use to you.

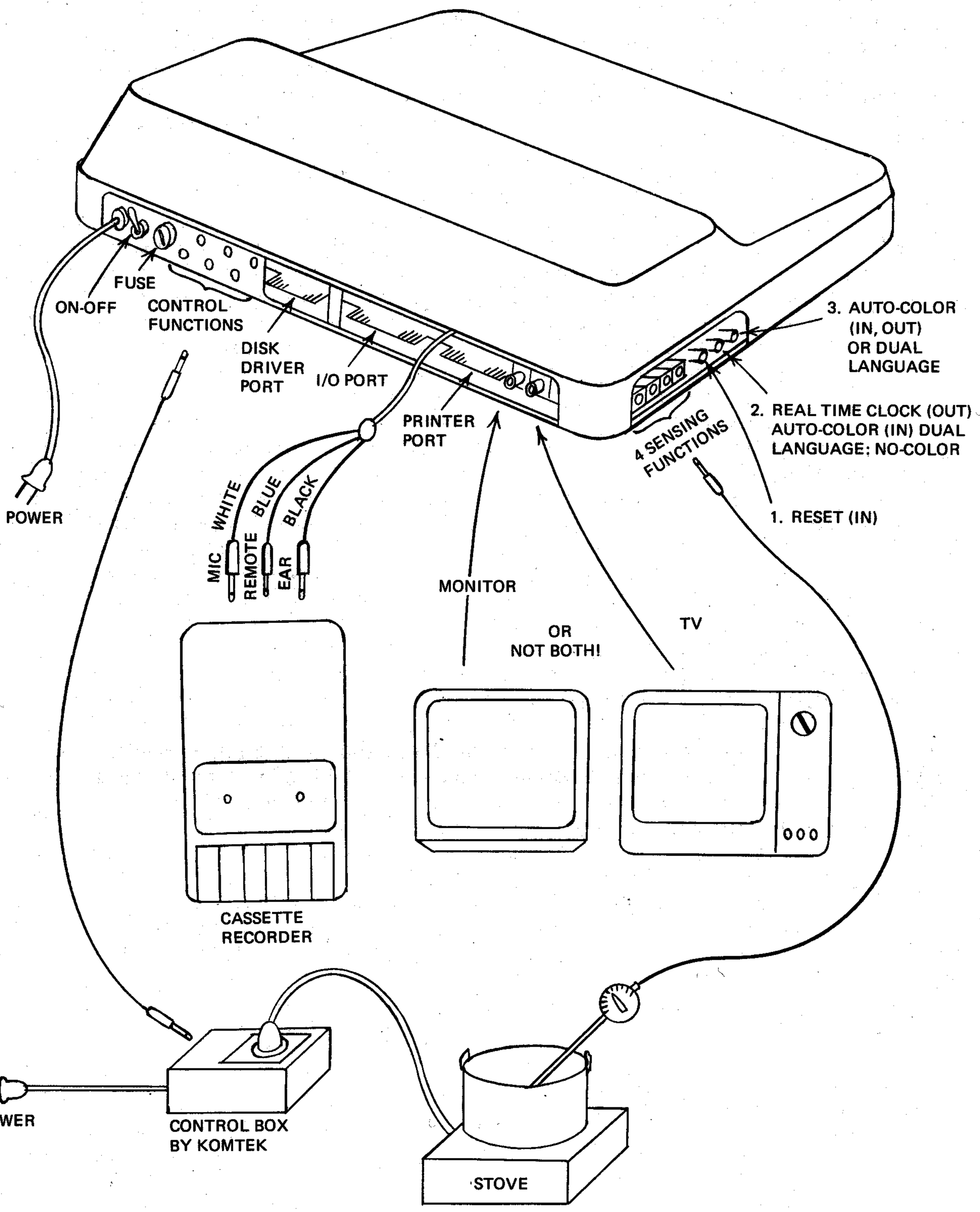
1) The Microcomputer unit
The Komtek 1 compute comes equipped with 16K RAM (Random access memory) 12K ROM (Read only memory) and is equipped with a modulator for use in conjunction with home TV and cassette interface to enable you to connect your audio cassette to the computer.

2) The Minimal system
With the Komtek 1 computer, connect it to the TV output of your television set and you now have a working system ready to go. To connect your TV to the Komtek 1 first remove the antenna from your home TV set and connect in its place the video cable which comes with the computer. On the computer side you will find that there are two outlets, one on the left for a VDU (Video Display Unit) which is often called a monitor and the outlet on the right is for home TV (looking from the rear of the computer). The difference between a monitor and home TV is that the monitor gives a much clearer and steadier picture than a home TV, displaying 64 x 16 characters occupies only a portion of the monitor screen, it will fully occupy a TV screen, 64 x 16 means that the display is 64 alphabets along horizontally across the screen and 16 rows in height.
With the Level II Basic lodged inside the computer you can do all sorts of programmes, Important: the results obtained should be recorded before the computer is switched off, otherwise all results will be lost.

3) The Economy System
As you use the minimal system you will wish to have some inexpensive way of recording your results, storing the programmes which you have carefully typed in so that you will not need to type it all over again at a future time. Adding a cassette recorder in conjunction with the minimal system gives you the Economy System.
However, a word of caution: not all cassette recorders will work with the computer especially those recorders which has an ALC (Automatic level control) with wide dynamic range because noise is created when there is no signal, also this type of cassette automatically turns on the recording volume very high, so that it may pick up noises which could be mistaken by the computer to be signal. Cheap recorders which produces distortions and undue response at certain level and frequency will not work properly. Consequently before you buy a cassette recorder from the electrical shop be sure to try it before buying. By far the best results have been obtained with digital cassettes made especially for computers and they are inexpensive. When you buy cassettes recorders be sure to get one with a "REMOTE" connection so that the computer can control the movement of the cassette and a counter to locate the start of your programmes, and if possible a level meter to tell you the strength of the signal.
After a while you will find that gaining access to information in a hurry is slow using a cassette. So we recommend a disk drive instead of a cassette recorder.

CONNECTING THE COMPUTER

The following diagramme shows the connection points of Komtek 1 and is self explanatory.



THE CONFIGURATION OF KOMTEK I

Physical Configuration

The Unit is self contained consisting of the following inside the main cabinet:

a) The Main Board, Power Supply & the Modulator are inside the main circuit cabinet.

b) It can be fitted with 16K; expansion to 32K on empty sockets on circuit board. Further expansion of another 16K is effected by a 16K RAM card bolted down onto the main board.

c) The disk drive controller is fitted into the roof of the cabinet. If double density controller is needed the double density card can be bolted onto the controller board.

d) The speaker is bolted onto the left side of the cabinet at the roof.

e) The printer interface for BASIC operation can be supplied with the main board in conjunction with Control & Sensing Functions.

f) However for disk operating system the printer interface for this purpose is a small box connected to the expansion port. Therefore there are 2 types of interface for printer functions.

g) The Auto-Colour interface is bolted down onto the main board. Provision for programmable color chips are already on the main board.

h) The control functions are on the main board and comes in as an option. It has 6 control channel outlets in the form of audio jack outlets and 4 sensing function in the form of 4 audio jack outlets.

i) The chasis is of heavy mild steel, galvanized. The power pack including the transformer is bolted onto it.

j) The keyboard is of the key switch type with gold plated contacts. The key top are of the double injection type, unless otherwise specified by the distributor of the respective country to be different.

Electronic Configuration:

a) CPU: Z80 running at 1.97 MHz

b) ROM: BASIC LEVEL 2; 12K in 3 chips, user software can be programmed onto the 4th chip

c) RAM: 4116, 8 chips per 16K expandable to 48K

d) Control Function: 8255, 6 Control channels, 4 sensing channels
Control Voltage output: 4V, 15MA. D.C.
Sensing channel with 5V boot up voltage

e) Basic Language Printer function: 8225

f) Disk Operating System Printer Interface: External circuit board with TTL array; Centronic.

g) Screen 64 x 16; Graphic 8 dots x 16 dots & 32 x 16 screen changeover.
50 cycle for PAL & 60 cycle for NTSC modulator & Monitor

h) Keyboard: English, upper & lower case with shift lock.
Foreign Languages optional.
Reset on keyboard or on side of computer optional

i) Colour: Programmable 16 colours, auto-color: 2-3 colour combinations, variation possible by shifting jumpers. No circuitry shall be provided for the Auto-colour. All faults factory repair. PAL & NTSC version available.

j) Power Supply: Transformer 55 watts
Power consumption of basic unit approx 20 watts

+5V	2.5A
+12V	500 MA
−5V	500 MA

k) Dual Language: For dual language version the switch-over is effected by manual switch on side of computer.

l) Disk Controller Interface: Single density main board with double density as option. Change-over from double to single & vise versa automatic.